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ABSTRACT

Successive samples from among students enrolled in French in grade 8 of the Ontario public schools were given English usage and mathematics concepts tests. Results revealed that an increase from 20 to 40 minutes per day of French instruction had no significant effect on students' achievement in English or mathematics. (JB)

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ELEMENTARY FRENCH PROGRAM EVALUATION: IMPACT OF INCREASED TIME FOR FRENCH ON ACHIEVEMENT IN ENGLISH AND MATHEMATICS

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Research Report 79-05

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ELEMENTARY FRENCH PROGRAM EVALUATION: IMPACT OF INCREASED TIME FOR FRENCH ON ACHIEVEMENT IN ENGLISH AND MATHEMATICS

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One of the major changes in the elementary French program during 1978-79 was an increase in the amount of instructional time devoted to French instruction in grade 8 from 20 to 40 minutes per day. The major purpose of this study was to determine whether or not this shift in instructional time allocation had any effect on students' performance in English or mathematics.[1]

Since both time and resources for this study were limited, the study has some limitations which should be borne in mind. First, the tests used to assess students' performance in English and Mathematics (C.T.B.S. Usage and Mathematics Concepts subtests), while covering key elements, do not cover the entire English and Mathematics curricula. The underlying assumption is that, if any significant change in students' achievement in English or Mathematics occurred, it would be reflected in these two 'marker' subtests. Second, and quite obviously, any change in students' performance in subject areas other than English and Mathematics could not be revealed by this study.

There are, in addition, two other constraints involved in interpreting the study findings. The first constraint is a logical one. If students who received 40 minutes of French instruction perform as well as

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[1]English and Mathematics were selected for study not only because they represent core, tool subjects but also because some of the extra time required for French instruction was to be taken from time previously devoted to these two areas.

those who received 20 minutes, one is probably safe in assuming that their English and Mathematics achievement did not suffer as a result. However, the converse may or may not be true. That is, relatively poorer performance in English and Mathematics by students who had 40 vs. 20 minutes of instruction in French may or may not be due to the increased time devoted to French. The second constraint is a technical one brought about by the fact that the number of instructional days preceding the administration of the English and Mathematics achievement tests was on the average greater for the grade 8 classes of 1977-78 (157 days) than for the grade 8 classes of 1978-79 (152.5 days). Although the test data can be corrected mathematically for this difference by prorating students' scores, minor differences in instruction may still exist because of the timing of the testing in relation to the curriculum covered at that point, viz., two to three weeks earlier in the school year.

METHOD

Selection of Samples

Using a computer-based procedure, all elementary schools (major units) were randomly assigned to one of five groups. Subsequent statistical comparisons of these groups of schools demonstrated that they were equivalent with respect to the student-characteristic dimensions[2] used in the formula used to allocate Learning Resource Teachers (Stennett & Isaacs, 1977). Fourteen classes were then selected randomly for testing from one of the five groups of nine major units. The 'same' grade 8 classes were tested in both 1977-78 and 1978-79.

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[2]For example, number of students over-age for grade, CTBS achievement test scores, IQ test scores, mobility of school population, etc.

Testing

Students in all 14 grade 8 classes in 1977-78 and 13 classes in 1978-79 were given the Usage and Mathematics Concepts subtests of the Canadian Tests of Basic Skills (CTBS) by specially trained substitute teachers who were supervised by one of the authors.[3]

In the 1977-78 year students were tested during the period from 25 May 78 to 9 June 78. In 1978-79 students were tested during the interval 7 May 79 to 15 May 79.

Wherever possible students' scores on the same CTBS subtests administered in grade 7, as well as their scores on the Dominion Test of Learning Capacity (CTLC), were extracted from computer files provided by MECA.

In addition to these tests, students were asked to complete a brief student identification form which included items covering name, birthdate, sex, prior French instruction and language(s) spoken at home.

Data Handling

All data developed for each student were keypunched to cards, verified and edited and all statistical analyses were subsequently done by computer using standard programs.

RESULTS

The main findings of the study are contained in Table 1. An examination of these data reveals the following trends:

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[3]The authors would like to express their appreciation to Mrs. June Pinkney who participated in the training and supervision and did all of the difficult work of scheduling.

(1) Despite the facts that the students who received 40 minutes/day of French instruction were probably slightly less capable, entered grade 8 with slightly poorer achievement levels and contained slightly more boys, their raw scores on the CTBS Usage and Mathematics concepts subtests are not statistically different from the grade 8 students who received only 20 minutes/day of French instruction.

(2) When the means of the 1978-79 students' scores on the Usage and Mathematics Concepts subtests are prorated to adjust for the fact that they had fewer instructional days prior to testing, the minor differences that do exist all but disappear.

(3) The fact that both groups of students' mean standard scores on the CTBS tests administered in grade 7 fall very close to the system mean of 60 confirms that they do constitute a good representative sample and that, therefore, the results of this study can be generalized with some confidence to the system level.

Table 2 provides data related to students' second language background and prior instruction in French. The two successive cohorts of grade 8 students are quite similar in these respects.

SUMMARY

Administration of standardized tests to representative samples of successive cohorts of grade 8 students revealed that an increase from 20 to 40 minutes per day of French instruction had no significant effect on students' achievement in English or Mathematics.

REFERENCES

Stennett, R. G. & Isaacs, Lorna Learning Resource System: Development and Application of a Resource Allocation Formula. Board of Education, London, Ontario, 1977 (mimeo).

TABLE 1 Statistical Comparison of English and Mathematics Test Scores of Grade 8 Students Receiving 20 Minutes/Day of French Instruction (1977-78) With Those Receiving 40 Minutes/Day (1978-79).

Variable	Grade 8		P*
	1977-78	1978-79	
Number of Cases	357	333	--
Percent Male	49	51	n.s.
	Mean (N)	Mean (N)	
Mean DTLC IQ	109.4(291)	107.0(259)	<.05
Grade 7 Mean Standard Score**			
- Usage	60.2(322)	58.9(288)	n.s.
- Math Concepts	60.4(323)	60.5(291)	n.s.
- Total Average	60.7(329)	59.4(296)	<.05
Grade 8 Mean Raw Score			
- Usage	15.9(353)	15.6(333)	n.s.
- Math Concepts	25.9(356)	24.9(332)	n.s.
Grade 8 Mean Raw Scores, Prorated for Number of Instructional Days			
- Usage	15.895	16.098	--
- Math Concepts	25.933	25.663	--

*P = Probability that the observed difference could occur by chance, based on F test; n.s. = difference not statistically significant.

**The standard score mean for the system is set at 60, with a standard deviation of 10.

TABLE 2 Second Language Background and Prior French Instruction of the Grade 8 Classes of 1977-78 and 1978-79.

Variable		Grade 8			
		1977-78		1978-79	
		N	%	N	%
Year of Birth	1962	4	1.1		
	1963	53	14.8	2	.6
	1964	280	78.4	57	17.1
	1965	20	5.6	261	78.4
	1966			13	3.9
Second Language Spoken at Home	None	297	83.9	273	82.2
	Yes, Not French	46	13.0	48	14.5
	Yes, French	11	3.1	11	3.3
Years of French Instruction Prior to Grade 7	0	296	82.9	279	83.8
	1 - 2	45	12.6	38	11.4
	3 - 4	7	2.0	13	3.9
	5 - 6	9	2.5	3	.9
Prior French Instruction Gr 6	None	328	91.8	300	90.1
	Some, Amount Unknown	29	8.1	33	9.9
	20 Minutes	3	0.8	0	0.0
	40 Minutes	0	0.0	0	0.0
Prior French Instruction Gr 7	None	17	4.8	9	2.7
	Some, Amount Unknown	8	2.2	24	7.2
	20 Minutes	332	93.0	299	89.8
	40 Minutes	0	0.0	1	0.3